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NEW WORM-LIZARDS (*ANCYLOCRANIUM* AND *AMPHISBAENA*) FROM SOUTHEASTERN TANGANYIKA TERRITORY

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1. *ANCYLOCRANIUM*

On the 27th May, 1959, Mr. C. J. P. Ionides collected at Newala an *Ancylocranium* which, later that same year, he donated to the British Museum (Nat. Hist.). While expressing the hope that more material would be forthcoming, I tentatively identified it with *A. barkeri* Loveridge (1946, Proc. Biol. Soc. Washington, vol. 59, p. 73, figs.), a species then, as now, known only from the ♂ holotype (M.C.Z. 48950).

Last year Mr. Ionides was successful in securing six additional *Ancylocranium* from Newala, the most southerly record known for any member of this peculiar genus. I find that all six differ from *A. barkeri* of Lindi District in precisely the same characters as did the first, as recorded in my manuscript notes. Consequently, I propose to designate these Newala *Ancylocranium* as a southerly form of *barkeri*, viz.

ANCYLOCRANIUM BARKERI NEWALAE subsp. nov.

Holotype. Museum of Comparative Zoology No. 67001 (Ionides No. 9356), a presumed ♂, from Newala, Southern Province, Tanganyika Territory. Collected by C. J. P. Ionides, Esq., on 12th June, 1961.

Paratypes. Ionides Nos. 8844, 9351-3, 9355, 9359, of which three are now in the Museum of Comparative Zoology (M.C.Z. 67002-4) and three in the British Museum Nat. Hist.) (BM 1959.1.5.18, 1962.177 and 1962.178).

Diagnosis. Head shields substantially the same as figured for *A. barkeri* from which, however, it may be distinguished as follows:

Median ventrals about six times as broad as their fellows; complete caudal annuli five or less.

27 (18 + 9) or 29 (18 + 11) segments in a midbody annulus; 205-215 annuli on body, normally 3 on underside of tail from post-anal ring to conical tip; known only from 7 specimens from Newala *b. newalae*

31 (20 + 11) segments in a midbody annulus; 222 annuli on body, 4 on underside of tail from post-anal ring to conical tip; known only from ♂ holotype ex Mbemkuru River, Lindi district *b. barkeri*

Median ventrals scarcely broader than their fellows; complete caudal annuli nineteen or more.

32 (16 + 16) or 34 (18 + 16) segments in a midbody annulus; 301-327 annuli on body, 19-23 on underside of tail; known from 7 specimens ex Kilwa and also Mtene, Rondo Plateau (Ionides writes me that he has since obtained 20 more from the Rondo Plateau, but these have not been studied) *ionidesi*

Description. Rostral enormous, compressed, arched, with sharp cutting edge; remaining head shields also as in the typical form except that the median upper labial is higher and relatively larger: also there is only a single anterior chin-shield (i.e. post-mental) in all paratypes though that of the type (which is the youngest) bears a faint trace of a longitudinal groove.

Segments in a midbody annulus 27 (18 + 9) (in two paratypes 29 (18 + 11)); annuli on body 205 (208-215 in paratypes); annuli on underside of tail from post-anal ring to conical tip 3 (4 in I 9353 only), above tail 6 (7 in all paratypes); anals 5 (as a result of the fusion of the median pair seen in *b. barkeri*, shown by traces of a longitudinal suture in *b. newalae* paratypes I 9351-9352).

Color. In alcohol. Rostral horn-colored, rest of head and body white (? flesh-pink in life), tip of tail purplish brown, the pigmentation extending backwards on the upper surface to beyond its conical end, and undoubtedly serving as a pseudo-head for the amphisbaenid while burrowing.

Size. Total length of holotype ♂, 228 (218 + 10) mm., which is the smallest of the series. Largest, apparently a ♀, 255 (245 + 10) mm. is now in the British Museum.

Discussion. Sexing. None of the seven specimens appears to be breeding. As indicated above, *b. newalae* is the most specialized of the three *Ancylocranium* occurring in Tanganyika Territory. Its very short tail renders sexing difficult without damage, but the type of *b. barkeri* was a verified δ in which the tail length was included 24.1 times in its total length. Quite probably tail length is no indication of sex in this species, but if it is one might expect δ δ to have longer tails. If this is the case then four of the Newala lizards are likely to be δ δ and three (I 9352, 9355, 9359) are \varnothing \varnothing . In that event the largest example, whose measurements are given above, would be a δ , whereas when I examined it two years ago I thought it a \varnothing .

In 7 *b. newalae*, ? δ δ : tail 22.8 to 25.6 times in total length.

? \varnothing \varnothing : tail 26.1 to 29.3 times in total length.

In 1 *b. barkeri*, δ : tail 24.1 times in total length.

In 7 *ionidesi*, ? δ δ : tail 10.5 to 11.7 times in total length.

\varnothing : tail 12.7 times in total length.

For figures and description of the strikingly different *ionidesi* see Loveridge, 1955, Journ. East African Nat. Hist. Soc., vol. 22, p. 177, figs.

2. AMPHISBAENA

The genus *Amphisbaena* furnishes us with an interesting series of stages in the specialization of worm lizards by reduction of head shields, annuli, etc. From the same district in which the *Ancylocranium* was discovered, two more undescribed amphisbaenids have been obtained by Mr. Ionides. Were it not for the fact that his name already figures in both genera as a result of earlier discoveries made by him, one would like to show appreciation for his generosity in enriching the collections of the Museum of Comparative Zoology and British Museum (Nat. Hist.) by naming one of these novelties after him. Instead, and as they may eventually be assigned subspecific rank, it is as well to name each one after its type locality.

Newala, situated on the edge of the Makonde Plateau at 2,600 feet, is headquarters for the district of the same name and some sixty air miles from the Rondo Plateau where occurs another member of the genus with a quite distinctive arrangement of head shields. The new species may be known as:

AMPHISBAENA NEWALAENSIS, sp. nov.

Holotype. Museum of Comparative Zoology No. 67005 (Ionides No. 9117), a ♂ from Newala, Newala District, Southern Province, Tanganyika Territory. Collected by C. J. P. Ionides, on 19 January, 1961.

Paratypes. Ionides Nos. 9112, 9114-6, 9118-22, of which four are now in the Museum of Comparative Zoology (M.C.Z. 67006-9), and five in the British Museum (Nat. Hist.). Collected by Ionides from 17 to 20 January, 1961.

Diagnosis. Referable to the subgenus *Cynisca*, in which it is intermediate between *A. ewerbecki* (Werner) with whose head squamation *newalaensis* agrees, and *A. rondoensis* Loveridge, with which it concurs in the number of segments in a midbody annulus. Trends may most readily be seen from the following key embracing variational range—approximately 20 in each of the other three species, of each of which I have seen 50 or more specimens.

Posterior temporal lacking (being fused with parietal).	
20 (10 + 10) segments in a midbody annulus; 227-247 annuli on body, 23-28 on tail; Rondo Plateau	<i>rondoensis</i>
Posterior temporal present immediately below parietal.	
20 (10 + 10) segments in a midbody annulus; 239-255 annuli on body, 22-24 on tail; Makonde Plateau	<i>newalaensis</i>
22 (10 + 12) segments in a midbody annulus; 252-277 annuli on body, 22-27 on tail; Nanguruwe, Newala	<i>nanguruwensis</i>
24 (12 + 12), very rarely 22 (10 + 12) segments in midbody annulus; 264-280 annuli on body, 25-28 on tail; Mbanja and Lindi, Lindi District	<i>ewerbecki</i>

Description. Due to fusing of the surviving head shields in the subgenus *Cynisca*, their complicated nomenclature is somewhat difficult to follow. The student is therefore referred to figures 22 (*ewerbecki*) and 23 (*rondoensis*) on pages 393-394 of my Revision of the African Lizards of the Family Amphisbaenidae (1941, Bull. Mus. Comp. Zool., vol. 87, no. 5). The lateral view of *ewerbecki* there shown, will be found to correspond with the head of *newalaensis* in displaying behind the temporal a scale (posterior temporal) immediately below the large parietal. This applies to all ten Newala lizards, as it did to all fifty *ewerbecki* that I collected at Mbanja on the Lindi coast. Viewed from above, the parietal suture of both *newalaensis* and *nanguruwensis* is markedly shorter than as figured for

ewerbecki. Also in both new species, immediately behind the parietals there are frequently traces of occipitals resulting from a marked tendency to enlargement of the median pair of scales in the first annulus.

Even so I have included this annulus as the first body annulus and counted backwards to, and including, the one bearing pores in males, i.e. the one immediately preceding the anals.

Segments in a midbody annulus 20 (10 + 10), as is also the case in every paratype; annuli on body 241 (239-255 in paratypes, viz. 239-243 in ♂♂, 246-255 in ♀♀) of which the median pair of ventrals are *only* about $1\frac{1}{2}$ times as broad as the adjacent ones; annuli on underside of tail *from* post-anal ring to conical tip 24 (as in all paratype ♂♂, 22-23 in three ♀♀); anals 6 (5 in one paratype, due to fusion), the median pair much enlarged, the immediate flanking pair of laterals transversely divided (or entire in some paratypes).

Color. In alcohol. Grayish white (? flesh-pink in life), uniform except for the *extreme* tip of tail which is purplish.

Size. Total length of holotype ♂, 144 (127 + 17) mm., largest ♂ in the series; largest ♀ (I 9114), 152 (136 + 16) mm.

In the six ♂♂ the tail is included in the total length 8.4 to 9.3 times; in the three undamaged ♀♀ from 9.5 to 10.4 times.

AMPHISBAENA NANGURUWENSIS sp. nov.

Holotype. Museum of Comparative Zoology No. 67010 (Ionides No. 9249), a ♂ from Nanguruwe, ca. 1600 feet, 8 miles south of Newala, Newala District, Southern Province, Tanganyika Territory. Collected by C. J. P. Ionides, on 16 May, 1961.

Paratypes. M.C.Z. 67011-19 (Ionides Nos. 9250-9355), being 37 ♂♂ (all used for statistics) and 69 ♀♀ (of which 62 were measured but only 42 had annuli counted). With same data as type but collected 12-16 May, 1961.

Diagnosis. See *Diagnosis* for *A. newalaensis*, where the preliminary paragraph and key are equally applicable to *nanguruwensis*.

Description. Again, see remarks under *Description* of the preceding species, for the head shields of *nanguruwensis* are substantially similar to those of *ewerbecki*.

Segments in a midbody annulus 22 (10 + 12), but counts made on only a score of paratypes: annuli on body 263 (252-277 in paratypes, viz. 252-269 in ♂♂, 261-277 in ♀♀) of which

the median pair of ventrals are *only* about $1\frac{1}{2}$ times as broad as the adjacent ones; annuli on underside of tail *from* post-anal ring to conical tip 27 (22-26 in 37 paratype ♂♂, 22-25 in 42 ♀♀); anals 6 (4 in four paratypes, due to fusion), the median pair much enlarged, the immediate flanking pair of laterals entire, transversely divided, or reduced to a tiny wedge

Color. In alcohol. Grayish white (? flesh-pink in life), uniform except that much of the tail, both above and below, may be purplish.

Size. Total length of holotype ♂, 160 (143 + 17) mm., largest of the 38 ♂♂; largest ♀ (I 9250), 170 (153 + 17) mm.

Total length of smallest ♂, 124 (111 + 13) mm., of smallest ♀, 100 (90 + 10) mm.

In the 38 ♂♂ the tail is included in the total length from 8.7 to 10.1 times, average 9.4 times; in the 62 ♀♀ from 9.4 to 10.9 times, average 10.1 times.